

## ON SOME COLLEMBOLA OF NEW CALEDONIA, NEW BRITAIN AND SOLOMON ISLANDS.\*

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Precious materials of Collembola collected by the OSAKA MUSEUM'S EXPEDITION to MELANESIA in 1958 are kindly submitted to the author for study. They include 29 forms, mostly in good condition, which allowed him to investigate each of them in full details. In reviewing the results the author has the impression as if the collembolan fauna of the region is strongly influenced by the Australian element, as may be imagined by the geographical position of these islands.

Hearty thanks are directed to Dr. T. TOKIOKA and Mr. Y. SHIBATA, who have taken the laborious tasks of collecting these tiny insects under difficult conditions and heavy duties.

### 1 *Xenylla mucronata* AXELSON (Fig. 1 A-G)

AXELSON (LINNANIEMI) 1912 -DENIS 1931-WOMERSLEY 1937

Syn? *Xenylla nova-zelandia*: SALMON 1941.

16 examples from Honiala, Guadalcanar Is. Solomon Islands, 20. IX. 1958, T. TOKIOKA leg.

Body length 1.0 mm, Colouration dark blue, strongly mottled on dorsal side. Ventrally it is pale. Antennae distally with an apical bulb, displaced to the ventral side and situated in a deep pit. Some 3-4 curving sensory setae are also on ant. IV. Ant. III-organ is a paired rod in a transverse furrow, accompanied dorsally with a minute sensory seta. The transverse furrow is somewhat swollen often hiding two sensory rods completely in it. Eyes 5+5, black. Legs with unguis slightly carinate and with one inner distal tooth. Tenent hair is long, apically swollen and 2, 2, 2 in number. Ventral tube with 4+4 setae. Rami tenaculi tridentate. Furcula feebly developed and not reaching ventral tube. D:mu as 2:1. Dens has dorsally usual two setae, the proximal one is situated much basally and often disappears—in two examples of 5 cases. Mucro is distally incurved and with rounded end. Inner and outer margin are narrowly lamellate until to short before the end. Anal spine 1 + 1, very small and upon low, broad papillae. Integument is granular and simple body setae are not much

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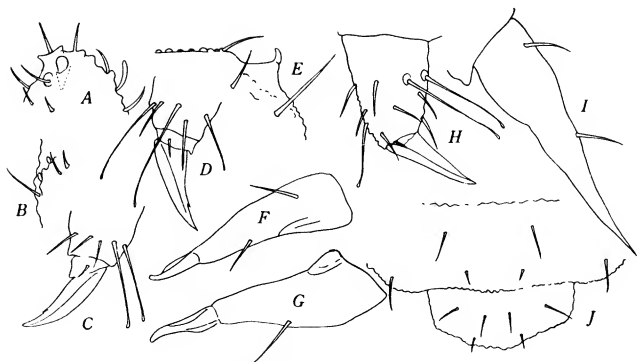


Fig. 1 *Xenylla mucronata* AXELSON

- |                     |                                |
|---------------------|--------------------------------|
| A : Apex of antenna | B : Ant. III-organ             |
| C : Hind claw       | D : Hind claw                  |
| E : Anal spine      | F, G : Dentes and mucro        |
|                     | <i>Xenylla oceanica</i> sp. n. |
| H : Hind claw       | I : Dentes and mucro           |
| J : Abd. Vand VI    |                                |

greater than two or three of the granules. Chaetotaxy is not satisfactorily studied. The species is different from *X. welchi* FOLSOM 1916 and *X. subwelchi* DENIS 1924 in the number of tenent hairs upon each legs, as well as by the narrow lamellae of mucro. Our examples are considerably different from the SALMON's description of *Xenylla novae-zelandiae*, but concordant with it in essential points.

The species is almost cosmopolitan, being known to occur from Europe, Central America and Australia.

## 2 *Xenylla oceanica* sp. n. (Fig. 1. H-J)

2 examples from Ilot Maitre, off Nouméa in New Caledonia, 16. X. 1958, Y. SHIBATA leg.

Body length 0.7 mm. Breadth 0.3 mm. Body is strongly convex in one example and dorso-laterally compressed in the other. Colouration dark gray. Dorsally, black pigments form a minute networks. Antennae and head are especially dark, while ventral side is paler. Antennae short. Ant. IV with many curving sensory setae and one apical bulb in a groove. Ant. III-organ is a paired rods in a shallow groove, accompanied dorsally by two small setae. Eyes 5+5, intensely pigmented. No postantennal organ. Legs with unguis untoothed. No unguiculus. Tibiotarsus bears one dorsal and two ventral setae longer than others, but they are ending pointed or slightly blunt. Ventral tube with 4+4 setae. Rami tenaculi tridentate. Furca feebly developed, its apex not reaching the abdominal end. Dentes have two setae and are confluent with mucro, which is extremely acuminate and pointed on apex. No anal spine is present. Integument is granulated and each body setae are so poorly developed, that it is impossible to trace the chaetal arrangement satisfactorily.

The species is near to the description of *X. longicaudata* FOLSOM 1897 of Japan, but different in having shorter furca not attaining the abdominal end.

## 3 *Neanura novae-caledoniae* sp. n. (Fig. 2, 3)

2 expls. from Vao, Ile des Pins, New Caledonia, together with many *Onychiurus* sp.  
11. XI. 1958, Y. SHIBATA leg.

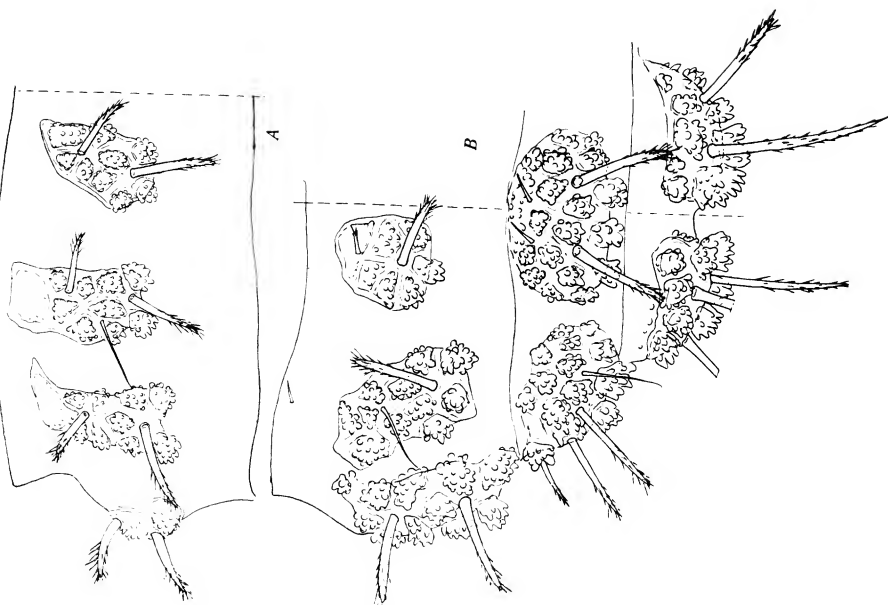


Fig. 3 *Neanura novae-caledoniae* sp. n.  
A: Abd. I B: Abd. IV to VI

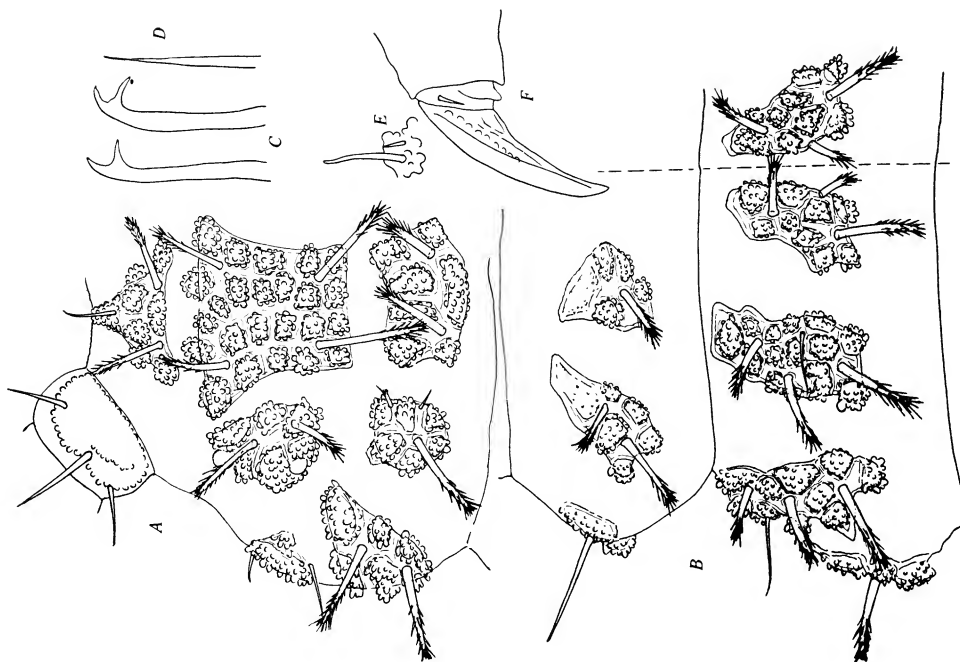


Fig. 2 *Neanura novae-caledoniae* sp. n.  
A: Head B: Th. I and II C: Mandibles D: Maxilla  
E: Sensory seta from the ventral side of Ant. III  
F: Hind claw

Body length up to 1.2 mm. Colour milky white in alcohol. Antennae tuberculated on first two segments. Ant. III-organ normal. Ventrally on ant. III a sensory seta with an accessory spine is located. Ant. IV with many curving sensory setae, one broad apical bulb and a seta with broad socket. Mandible distally forked in two rami. Maxilla stylet-like. Eyes 2+2, not pigmented. No postantennal organ. Legs with carinate unguis, untoothed and slightly granulated. Ventral tube with 4 + 4 setae. Rudiments of furca absent. Segmental tubercles are all very well developed. Each tubercles are distinctly subdivided by smooth integumentary furrows into areas and each areas are considerably elevated and finely granulated. These granules, which are hemispherical on almost all body segments, become higher and, therefore, "drusen-förmig" on abd. V and VI, reminding us those of *Bilobella*. Body setae are uncoloured, barberated on their distal half. Upon head, clypeal tubercle is isolated from the quadrangular frontal tubercle. The former bears 3 setae, one median spinous and two barbulated ones. The latter has 2 + 2 setae. Ocular tubercle with 2 setae. From the posterior row of tubercles, dorsal ones are united medially in one mass, bearing 1+1 setae. Subdorsal one with 1 seta. Prothorax with 3+3 tergal tubercles beside one smaller tubercle upon subcoxa. Setae upon them are 1, 2, 1. Upon meso- and metathorax setae are located as 3, s+3, 3+s, 1. Abd. I-III with 4 + 4 tubercles with 2, 2+s, 2,2 setae. Abd. IV is alike to them, but anterior one seta of dorsal tubercle is reduced in shape and subdorsal one with 1+s. Upon abd.V, a paired dorsal tubercles are united medially, bearing a pair of usual and another pair of anterior small, spiny setae. Lateral tubercle with s+4. All these s.s. are slender and not serrated. A paired tubercle upon abd.VI are well developed, roundly elevated and strictly separated to each other.

With its well subdivided segmental tubercles, the species may be regarded a kind of *Neanura* (s. str.), but different from palearctic species with its *Bilobella*-type of granulation upon posterior abdominal segments. The species represents perhaps a special group of *Neanuridae* of the southern hemisphere. It is near to *Neanura hirtella novae-zelandiae* SALMON 1941 in body setae and others. But the species is different from the Australian *Neanura cirrata*-complex, to which the cited form belongs, decidedly, by having well separated tubercles upon abd. VI.

#### 4 *Lobella* (*Propeanura*) *araucariae* sp. n. (Fig. 4)

1 female from Vao, Ile des Pins, New Caledonia, 11. XI. 1958, Y. SHIBATA leg.

Body length 1.6 mm. Body colour dirty white in alcohol. Ant: head as 1.0. Ant. I and II with grobly granulated area. Ant. III and IV confluent. Ant. IV with a trilobed end bulb and many curving sensory setae. Ant. III-organ in a shallow groove, accompanied dorsally by a sensory seta. Eyes 2 + 2, not pigmented. Ungranulated

area before the eyes is small but distinctly present. Buccal cone not reaching the frontal margin of head. Mouth parts rather reduced. Maxilla stylet-like. Mandible distally forked. Legs with unguis untoothed and with slight granulation. Ventral tube with 4 + 4 setae. Body setae are rather short and distinctly barberated near the distal end. Segmental tubercles are very poorly developed. Upon head, all tubercles between ocular tubercles of either sides are united to one mass of granulated area on which 3+3 setae are present. The most ante-

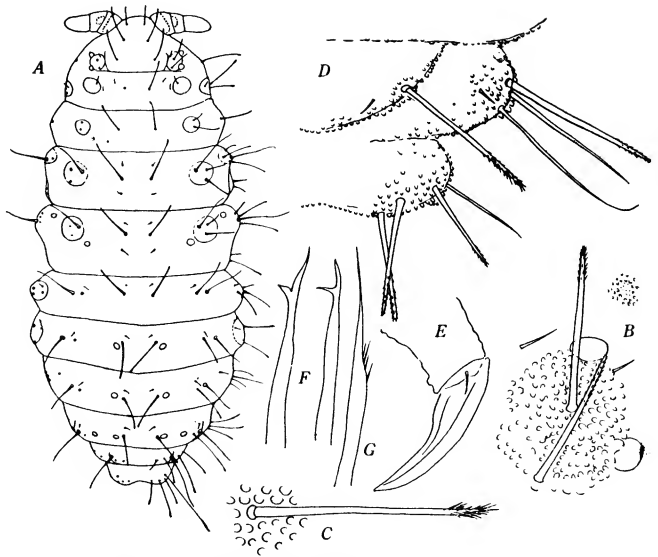


Fig. 4 *Lobella araucariae* sp. n.

A: Habitus B: Ocular tubercle C: Body seta  
D: Abd. V and VI E: Hind claw F: Mandibles  
G: Maxilla

rior pair of these setae are, however, spinous and not barberated. From the occipital row of tubercles, dorsal one is represented by 1+1 setae and the subdorsal pair is slightly globose and with one large and 3 small setae. Dorsal row of tubercles of all body segments are absent and represented only by the setae, while the subdorsal tubercles are feebly present upon each thoracic segments. Th. I with 1, 2, 1 setae. Th. II, III have setae as 1, s+2, 3+s, 1 and the dorsal large seta is accompanied by 2 minute setae, located anterior and posterior to it. Abd. I-IV has 1, 1+s, 2, 3 setae. The dorsal and subdorsal seta has one minute seta anterior to each. Upon abd. V, the dorsal tubercle is represented by a small area located at the margin of the swelling, which is laterally dislocated and with 1 large and 1 small setae. Lateral tubercle of the segment is also vestigial, with 3-4 body setae and one long, slender s.s. Abd. VI is strongly reduced, the paired tubercle is of low elevation and wide apart to each other.

The present form is near to *Gnatholonche sensilla* SALMON 1948 from Three King Islands, but does not coincide with it in the form of body setae. In the cited species, it is evenly serrated all throughout their length, while it is strongly barberated on apex in the present form. Detailed studies of the cited species is, however, needed. The species cannot be included in the genus *Gnatholonche*, because we know not much about the genotypical species from Java.

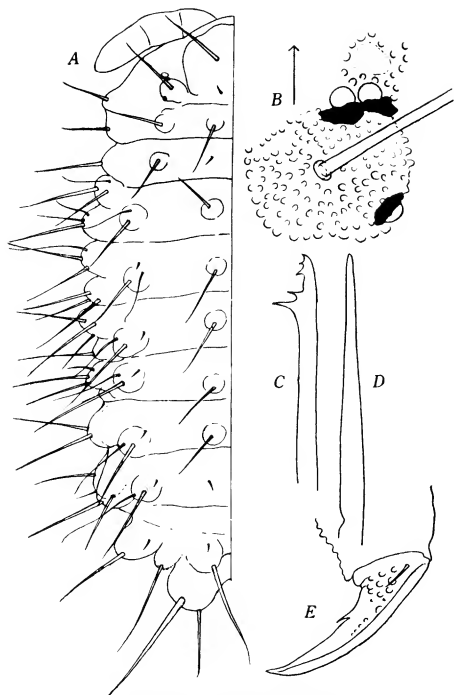


Fig. 5 *Lobella guadalcanarae* sp. n.

A: Habitus B: Ocular tubercle C: Mandible  
D: Maxilla E: Hind claw

## 5 *Lobella guadalcanarae* sp. n. (Fig. 5)

3 examples from Upper Stream of Riv. Tantu, Guadalcanar, Solomon Islands, 21. IX. 1958, T. TOKIOKA leg.

Body length up to 1.5 mm. Colour milky white in alcoholic specimens. In living, they must have had some bright colouration. Antennae usual for the genus. Sensory setae of distal segments are slender and well developed. Eyes 3+3, slightly pigmented and the anterior two are situated close together. A rounded postantennal field is relatively large and distinct. Buccal cone well protruded, reaching to the fore margin of the head. Mouth parts somewhat weakly developed. Mandible is distally provided with 3 small apical and some 2 larger subapical teeth. The latter is triangular in shape. Maxilla is simply spiniform. Legs short, not visible from above.

Unguis is feebly chitinised, dorsally carinate

and with one very indistinct inner tooth at about the middle, which might easily be overlooked if the unguis is not properly located. Inner side of the unguis medially as well as basally faintly granulated. Body surface is minutely granular. Body tubercles and setae are arranged in following peculiar manner: Head capsule has, between rounded ocular tubercles of each sides, one large median tubercle, upon which 1+1 large anterior and 1+1 small posterior pair of setae are present. Occipital region has dorsal and subdorsal tubercle, each provided with one large seta. Laterally, no big lateral tubercle is to be seen. Th. I has no dorsal tubercle and it is represented by a small seta at the position. Subdorsal and lateral tubercle is well represented and each with one large seta. Upon th. II and III, small dorsal tubercle is beset with only one large seta in stead of usual two setae. Subdorsal tubercle is laterally dislocated and with one large and one minute setae, together with one feeble *seta sensuais*. Sublateral tubercle has some 2 large setae and one *seta sensuais*. Lateral tubercle is practically dislocated ventrally. Abd. I-III has also a small dorsal tubercle with one large seta. Subdorsal tubercle of these segments is more laterally situated than on thoracal segments and with one large seta and one *seta sensuais* outside of the former. A small seta is also to be seen basally. Sub-

lateral and lateral tubercle of these segments are latero-ventral in position and the latter is almost overwrapped by the former. Characteristic is the feature of abd. IV, where no dorsal tubercle is present and 1+1 small seta is located at that place. Other segmental tubercles are not different from the precedent segment. Abd. V has 3+3 tubercles well separated. Dorsal one is rounded and with one large apical and one small basal setae. Subdorsal tubercle is a little smaller and with one conspicuous *seta sensu* apically. Lateral tubercle is also rounded in shape, as large as the dorsal one and with one large apical and one small basal setae. Abd. VI has 1+1 rounded tubercles with some large setae. All body setae are uncoloured, spinous and not at all serrated.

What is characteristic of the present species in chaetal arrangement is the reduction of setae and tubercles upon head, fewer setae upon dorsal and subdorsal tubercles of the trunk and three paired tubercles upon abd. V. *Lobella* species with simple setae is known to occur from Australia as *Achorutes rosaceus* SCHÖTT 1917, but it has only 2+2 tubercles upon abd. V.

## 6 *Onychiurus* cf. *fimetarius* LINNÉ

WOMERSLEY, 1939.

Many examples from Vao, Ile des Pins, New Caledonia, 11. XI. 1958, Y. SHIBATA leg.

The form is almost equal to WOMERSLEY's *O. fimetarius* L. 1939. It has, however, the ventral organ of male alike to that of *O. folsomi* SCHÄFFER, described by YOSHII 1956. Pseudocelli are more numerous than in the cited species, but variable both in number and in position, ranging to 3+1, 1-2/1, 3-4, 3-4/4, 4, 4, 6, 3. Subcoxae with 2, 2, 2. Ventrally it is not calculable, being highly variable. I retain the description of this apparently new species until more is known about the European form of the *fimetarius* group.

## 7 *Onychiurus* sp.

1 example from Bouin, Bougainville, Solomon Islands, 16. IX 1958, T. TOKIOKA leg.

An immature specimen with *armata*-type of postantennal organ and well developed anal spines. Body is strongly elongate as in *Tullbergia*.

## 8 *Oudemansia schötti* DENIS (Fig. 6)

DENIS : 1948

6 examples from Ilot Maitre, off Nouméa, New Caledonia, 16. X 1958, Y. SHIBATA leg.

Body length 1.1 mm. Intensely black all over the body. In lactic acid, intersegmental structures are pale. Antennae shorter than the head. Three segmented, the last two

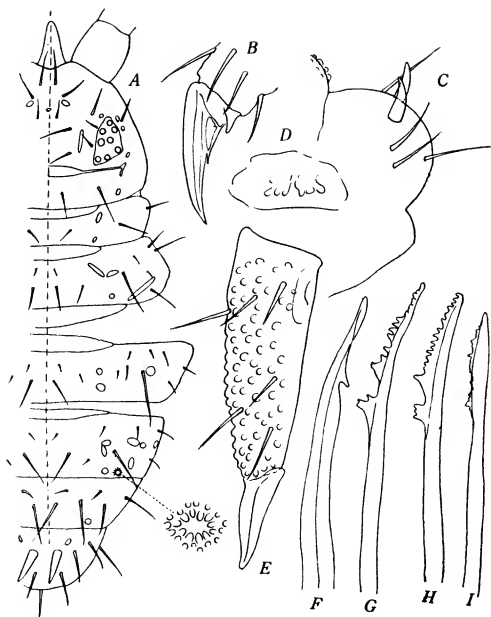


Fig. 6 *Oudemansia schötti* DENIS

A: Setal arrangement B: Mid claw C: Anal segment D: Tenaculum E: Dentes and mucro F: Maxilla G, H: Mandibles I: Side view of the labial appendage

segments being completely fused. Ant. IV has, beside distinctly trilobed apical bulb, some curving sensory setae. Ant. III-organ is not visible at all. Head with 8+8 small eyes. No postantennal organ. Legs with carinate unguis and one distinct inner tooth. Ventral tube with 4+4 setae. Tenaculum with a median hump. Its rami are very low and tridentate. Ventral tube with 4+4 setae. Furca short, not reaching the ventral tube. Dentes dorsally granulated and with 6 setae. Mucro in boat-form, having a ventral keel and its margins are entire, ending in rounded apex. D: mu as 2:1. Upon abd. VI, 1+1 anal spines are erecting upwrightly without having papillae. Buccal cone is prominently protuded over the head, reaching to the niveau of ant. I. Mandible is distally slightly curving

and with many dentation on one side. Maxilla is spiniform and with lateral lamella, having a notch near the apex. Beside these two elements, there is an another elongated shaft with a delicate lamella minutely serrated. This is probably an appendage of labial origin. Chaetotaxically, the species does not differ greatly from *Oud. esakii* (KINOSHITA) reported by YOSHI 1957. Setae sensuales are not differentiated. Two anal spines upon abd. VI represent  $a_1$  of the segment and are, therefore, not equivalent with those of *Hypogastrura*.

*Oud. schötti* DENIS is hitherto known from Vietnam. But as the cited species in unknown of the mouth parts and the geographical location is so remote, I have some doubt about the identity. Of Australian forms, *Poyacanthella barnardi* WOMERSLEY 1930 from Africa and Queensland has no inner tooth of the unguis. *Anuritelsa maritima* WOMERSLEY 1939 from the shore of Queensland is probably a kind of *Oudemansia*, but it has no anal spines.

## 9 *Axelsonia littoralis* MONIEZ

WOMERSLEY 1939, YOSHI 1955

5 examples from Ilot Maitre, off Nouméa, New Caledonia, 16. X. 1958, Y. SHIBATA leg.



New Caledonian examples coincide well with Japanese forms reported by me. The species is known to occur from almost all parts of the world as a littoral species.

# 10 *Seira oceanica* sp. n. (Fig. 7)

31 examples from Hienghène, New Caledonia, 19. XI. 1958, Y. SHIBATA leg.

Body length 1.5 mm. Ground colour white. Intensely blue-black pigmented are tergites of th. III to abd. III, leaving the median dorsal area paler. Antennae darkly pigmented upon distal three segments. Posterior margin of abd. IV with a narrow band of pigments. Ant: head as 12:25. Ant. segm. as 7:11:12:18. First three segments are with scales. Ant. IV with a slight sign of annulation. Eyes 8+8, proximal two are much larger than others. Frontal margin with pigmented median spot and with a row of ciliated setae. Th. II moderately developed. Th. II:III as 9:6. Abd. III:IV as 3:10. All legs scaled until to the tibiotarsus. Unguis and unguiculus normal for the genus. Tenent hair slender, longer than the unguis and distally dilatated. Trochanteral organ of hind legs feebly developed and composed of about 20 weak spiny setae. Ventral tube not much hirsute. laterally with a setal comb composed of 4+4 setae. Furca with man:d as 4:5. Manubrium is ventrally scaled and dorsally hirsute, leaving a smooth median stripe. Distal end of ventral side has some 5+5 setae in a transverse row. Dentes tapering distally, ventrally scaled and dorsally without any special setae. Mucro falciform, without basal spine. Distal smooth part of dentes about 2 times of mucro. Chaetotaxy is very characteristic and constant with respect to all tergites of th. II to abd. III as figured. S. s. are rather short and with accessory spines finely ciliated. Scales of all tergites are slightly brownish, distally almost rounded and feebly striated.

From Oceania, following forms of *Seira* spp. are hitherto known:

## BANDED SPECIES:

- Lepidocyrtus schäfferi* SCHÖTT 1901  
 .....New Guinea  
 ? *Sira fuscipicta* SCHÄFFER 1898...New Britain  
*Lepidocyrtinus saipanensis* UCHIDA 1944  
 ..... Micronesia  
*Drepanocyrtus terrestralis* FOLSOM 1932  
 ..... Hawaii

## PALE OR UNIFORMLY COLOURED SPECIES:

- ? *Lepidocyrtus falcifer* SCHÄFFER 1898  
 .....New Britain

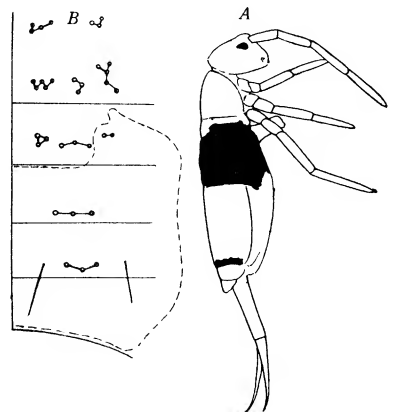


Fig. 7 *Seira oceanica* sp. n.  
 A: Habitus B: Chaetal arrangement (diagrammatic)

*Lepidocyrtinus queenslandica* WOMERSLEY 1935, 1936, 1939 .....Australia

*Lepidocyrtinus armatus* CARPENTER 1935 .....Marquesus

*Lepidocyrtinus domesticus* (nec LUBBOCK) WOMERSLEY 1939 .....Australia

The present species is near to *S. fuscopicta*, but different in the colouration of antennae and of abd. V.

# 11 *Lepidosira nigrocephala* (WOMERSLEY) (Fig. 8)

*Mesira nigrocephala*: WOMERSLEY 1934, 1939

4 examples from the debris along the sea shore at Vao, Ile des Pins, New Caledonia, 10. XI. 1958, T. TOKIOKA leg.

Body length 1.7 mm. Colour white, when denuded of scales excepting the head capsule, which is violet red in colour. Intensely brownish scales render some transverse stripes on trunk. Antennae not coloured. Ant.: head as 22:74. Ant. segm. as 10:18:18:26. At least the first two segments are with hyaline scales. Ant. IV is annulated. Eyes 8+8, subequal. Legs scaled until to the femur. Tibiotarsus is not scaled, if not fallen off. Unguis with well developed lateral teeth. Inner margin bidentate, the proximal ones at about the middle on hind legs. Unguiculus lanceolate. Tenent hair as long as the unguis and distally swollen. Trochanteral organ poorly developed, composed of ca. 18 feeble spiny setae. Furca with man:d as 5:7. Manubrium is dorsally hirsute with feathered setae and the dorsal dental end has 3+3 longer setae in a longitudinal row. Ventrally, scales are hyaline and oval. Terminal portion has a group of many strongly elongated setae, lanceolate in appearance. Dentes hirsute both dorsally and ventrally. No dental setae are modified. Mucro

bidentate and with a basal spine. Body scales are very characteristic. Body surface is densely covered with scales of two sorts. Strongly brownish scales are distributed dorsally along the hind margin of head and all body tergites to form an apparent transverse band of brown colour to the body, while other parts are densely covered with hyaline scales not much different in form. They are ovate, almost rounded on apex and heavily striated. Chaetal arrangement is, as usual for all known forms of *Lepidosira*, more reduced than in

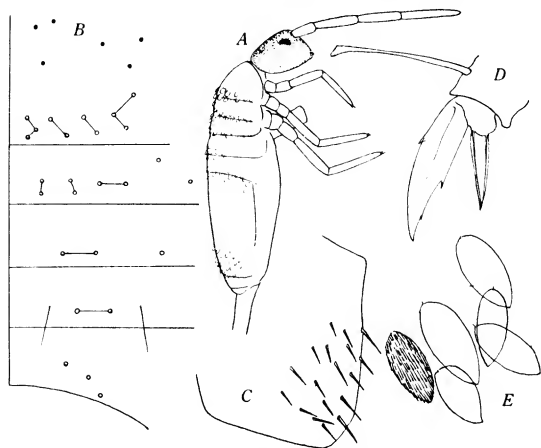


Fig. 8 *Lepidosira nigrocephala* (WOMERSLEY)

A: Habitus B: Chaetal arrangement (diagrammatic)

C: Trochanteral D: Hind claw E: Body scales

*Seira* and as represented in fig. B. Those of th. II p. th. III and abd. I are seemingly constant and specific. S. s. are not long and with some short accessory setae lightly feathered.

The New Caledonian form differs from the description of this species from Australia in having the head capsule paler and posterior abdominal segments uncoloured. Presumably, this is the pale form of the species. For exact determination, chaetal studies are needed. That the ventral side of dentes are not scaled but beset with setae are curious for the genus. Further observations are needed.

## 12 *Lepidosira punctata* sp. n. (Fig. 9)

1 example from Koghi, New Caledonia, 9. X. 1958, Y. SHIBATA leg.

Body length 2.0 mm. Colouration white. Antennae and legs slightly dark. Deep bluish black markings are upon frontal margin of the head and on distal part of hind femur, as well as on both sides of abd. V and VI. Slight bluish stripe is present transversely on both sides of abd. IV. Ant.: head as 23:60. Ant. ratio as 10:18:15:25. Hyaline, but distinctly striated narrow scales are covering dorsally ant. I and II. Ant. IV is slightly annulated and with an apical bulb. Eyes 8+8, anterior two larger than others. Fore margin of head with many apically rounded setae. All legs with narrow scales until to the tibiotarsus. Unguis broad, with conspicuously developed lateral teeth. Inner margin bidentate as usual. Unguiculus acutely lanceolate, acuminate to the end. Tenent hair well developed, thick and very long, much longer than the unguis. Coxal setae as 2, 6/3, 7. Trochanteral organ composed of about 25 short spiny setae upwrightly standing. Ventral tube anteriorly as in the precedent species. Posteriorly, setae are short, spiny and scarce in number. Whether their arrangement is to be used for specific identification is not ascertained. Furca with man:d as 28:38. Manubrium is ventrally scaled and dorsally with many feeble feathered setae. No terminal group of dorsal setae are differentiated. Dentes also ventrally scaled and dorsally with usual setae. Dorsal crenulation terminated abruptly leaving smooth portion about 2 times the length of typically built mucro. Mesothorax is moderately projecting forwards. Abd. III:IV as 1:4. Body hairs reduced. A tuft of

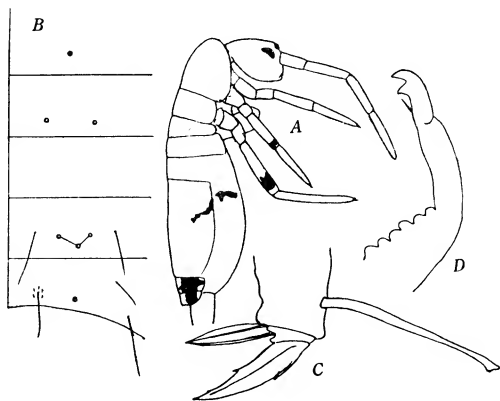


Fig. 9 *Lepidosira punctata* sp. n.

A: Habitus B: Chaetal arrangement (diagrammatic)  
C: Hind claw D: Mucro

cervical setae are not brush shaped, but obtusely rounded on apex. Abd. II have 3+3 setae in shallow V-form, they are short and distally rounded. The same sort of setae are present abundantly on abd. IV, where there are also some extremely thin, long and filiform setae. S. s. not well represented and the accessory setae are as in the precedent form. Scales of the body are feebly brownish, pointed upon head and mesothorax and rounded on other tergites. They are all with longitudinal striae.

The species is unique in body pattern.

### ***Lepidocyrtoides* SCHÖTT, 1917**

With its striated scales, the genus is nearly related to *Lepidosira*. But the chaetotaxy of larger body setae are typically oligochaetotic in *Lepidosira* as in the related genus *Seira*, while it is almost achaetotic in *Lepidocyrtoides*. Only some small number of setae are present posteriorly from abd. II. Some setae upon abd. IV are elongated and filiform in appearance. Mesonotum often (not always?) protruded over the head. Dorsal setae of furca sometimes modified.

Genotypus: *Lepidocyrtoides cucularis* SCHÖTT 1917

(sensu WOMERSLEY 1937)

I should like to place the present problematic genus in Seirinae. The genus takes the intermittent position between *Lepidosira* and *Lepidocyrtus*. The scales are, in *Lepidocyrtoides novae-caledoniae* sp. n. at least, narrow and pointed upon extremities and on th. II, while they are rounded oval upon other tergites. Both types of scales have, however, striated type of sculpture as in other forms of Seirinae. In the chaetotaxy, on the other hand, larger setae of anterior body segments are reduced as in *Lepidocyrtus*. On abd. II, III, some such setae are present in weaker form and on abd. IV, there may be seen many moderate setae together with those very long and filiform ones, which arise from the postero-lateral part of the segment. The protruded type of mesothorax, which is stressed by WOMERSLEY 1937 and UCHIDA 1944 as generic character, is seemingly not always the case, because we have also such forms as *Lepidocyrtoides sagmarius* SCHÖTT, whose mesothorax is not at all protruded. The case is perhaps comparable to those of the genus *Lepidocyrtus*, in which such two types are coexisting in one genus.

### **13 *Lepidocyrtoides novae-caledoniae* sp. n. (Fig. 10)**

1 example from Koghi, New Caledonia, 9. X. 1958, Y. SHIBATA leg.

Body length 3.3 mm. Colouration yellowish white, when denuded of brown scales. Each antennal segments with bluish proximal and distal stripes. Legs are also striped upon femur and tibiotarsus of each legs. Head with coloured fore margin. Other

parts of the body quite pale. Antennae 3 times as long as the head. Ant. segm. as 27 : 40 : 35 : 55. It is dorsally scaled from the basis until to the proximal half of ant.

III. The last segment is slightly annulated and with a terminal bulb. Head with brush shaped setae along the fore margin and spiny setae along the hind margin.

Legs densely scaled with fusiform scales. Coxal setae approximately as 4, 8/4, 8. They are fewer than in

*Lepidocyrtus*. Unguis with a pair of well developed lateral teeth, to form a kind of pseudonychia. A dorsal tooth is also prominent. Inner margin with two teeth. Unguiculus lanceolate, acuminate to the apex and with rather broad outer margin. Tenent hair long, thickly built and with dilatated apex. Femur and tibiotarsus bears some extra long setae and distal part of tibiotarsus often with many thick setae. Trochanteral organ composed of numerous (more than 50) erecting spiny setae in quadrangular arrangement. Ventral tube is anteriorly scaled and with 4+4 larger distal setae. Posteriorly, setae are spiny and fewer. No lateral basal comb is observed. Mesothorax is prominently protruded over the head. Th. II : III as 3 : 1. Abd. III : IV as 1 : 6. Furca long, man:d as 2 : 3. Manubrium is ventrally and laterally scaled with many small and long, larger scales. Dorsally, many slender, feathered setae are present. Near the dental end of dorsum there exist longitudinally arranged 4+4 blunt spines, which are finely ciliated and apically rounded as in case of some African species of *Seira* or *Lepidocyrtinus*. Dentes distally tapering. Ventrally it is heavily scaled. No special modified setae are present. Dorsal crenulation is evident and terminated abruptly, leaving the smooth part about 2 times the length of mucro. The latter is bidentate and with a basal spine. Body scales are intensely brown and castaneous. Upon head and th. II, they are fusiform in outline and pointed on both ends, while they are ovate and rounded upon other body tergites. All of them have longitudinal striae of *Seira* type. Setae of larger size almost achaetotic. Except for the heavy tuft of brownish brushy setae along the fore margin of mesothorax, no such setae are present upon each tergites. Abd. II has 3+3 somewhat larger setae

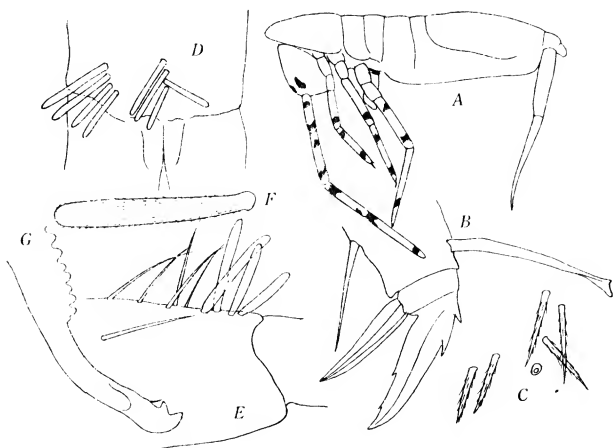


Fig. 10 *Lepidocyrtoides novae-caledoniae* sp. n.

A: Habitus B: Hind claw C: Accessory setae of s. s.

D, E: Arrangement of dorsal setae upon dentes

F: One of such setae in greater enlargement G: Mucro

in shallow V-form between two s.s. of the segment. Abd. IV and V have some setae apically rounded together with those, which are extremely slender, long and filiform on distal end. S.s. are not long, their accessory setae are short, blunt and ciliated.

**14 *Acrocyrthus ralumensis* (SCHÄFFER) (Fig. 11)**

*Lepidocyrtus ralumensis*: SCHÄFFER 1898, SCHÖTT 1917, WOMERSLEY 1939

3 examples from Rabaul, New Britain, 1. IX. 1958, T. TOKIOKA leg.

2 examples from Upper Stream of Riv. Tantu, Guadalcanar, Solomon Islands, 21. IX. 1958, T. TOKIOKA leg.

Body length 1.8 mm.—2.0 mm. Ground colour yellowish brown. Antennae dark blue throughout the length. Proximal half of head capsule darkly pigmented. With scattered black pigments. All legs are faintly pigmented blue. Ant.: head as 4:3. Ant. segm. as 25:40:32:75, so that ant. III is shorter than ant. II. Ant. I and II are dorsally glabrous and scaled. Eyes 8+8, upon black patches, of which the posterior two are smaller than others. or missing. Frontal margin of head not with median spot, but uniformly with dark pigments, which are distributed downwards until to the mouth. No frontal setae are converted to scales. Mesothorax moderately protruded over the head. Th. II:III as 20:9. Ant. III:IV as 1:6. Coxal setae as 8, 10/11, 14. Trochanteral organ with about 25 spines arranged in a triangular area. Legs scaled until to the tibiotarsus. Unguis normal, with a paired lateral teeth distinctly developed. Inner margin with one paired basal and one or two distal teeth. Unguiculus lanceolate, apically acute, surpassing the basal tooth on fore and mid legs and reaching to distal one upon hind legs. Tenent hair slender and short, attaining about 2/3 the inner margin of unguis on hind legs. Ventral tube anteriorly with 3+3 larger terminal setae and with many proximal ones. Posteriorly, it is beset with some feebler setae. Furca with man.=d. in length. Manubrium dorsally with feathered

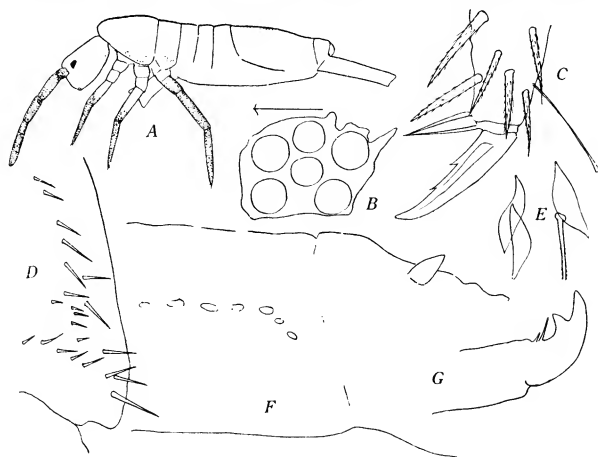


Fig. 11 *Acrocyrthus ralumensis*  
(SCHÄFFER)

- A: Habitus
- B: Eye field
- C: Hind claw
- D: Trochanteral organ
- E: Accessory scales of s. s.
- F: Dental lobe
- G: Mucro

setae and ventrally scaled. Laterally, about 14 pairs of larger setae are arranged in a row. Terminal group of ventral setae 3+3. Dentes with acute appendix dorsally upon dental lobe. No dental setae are converted to spinous setae. Distal smooth portion about 2 times the length of mucro, which is equally bidentate and with a basal spine, which is accompanied with a small second spine at the basis. s.s. large. Their accessory scales are brownish and lanceolate.

The form coincides fairly well with the description of SCHÄFFER 1898. Examples from Bougainville Island differ from those of New Britain in colouration of the body in that sides of th II, III and anterior half of abd. IV are slightly dark and the head is practically uncoloured. From *Acrocyrtus solomonensis* sp. n. of Guadalcanar, the species is easily discriminated by the absence of specialized scales on frontal margin of the head. The species is already known to occur from New Britain and Australia.

### 15 *Acrocyrtus solomonensis* sp. n. (Fig. 12)

2 examples from Upper Stream of Riv. Tantu, Guadalcanar, Solomon Islands, 21. IX. 1958, T. TOKIOKA leg.

Body length 1.4 mm. Ground colour white. Antennae deeply pigmented blue. Such pigments are also scattered along the fore margin of the head and also on distal parts of all legs. Ant./head as 9/5. Ant. segm. as 20:45:40:70. Ant. III is, thus, shorter than ant. II. All of them are not annulated. Ant. I and II are dorsally without setae and the place is covered with small rounded scales. Eyes reduced to 6+6 in two examples at hand. All cornea are equally large in a rounded black eye field. Fore margin of the head is provided with some specialized scales as in case of *A. heterolepis* Yosui of Singapore. Th. II is not much protruded over the head. Abd. III/IV as 8:30. Number of coxal setae approximately as 9, 7/12, 15. Tenent hair

slender and rather small. Opposite seta of hind legs is not to be observed in two examples at hand. All setae upon each tibiotarsus are rather thickly built and sometimes fusiform, being broader at about the middle than at the base. Scales are present until to the tibiotarsus.

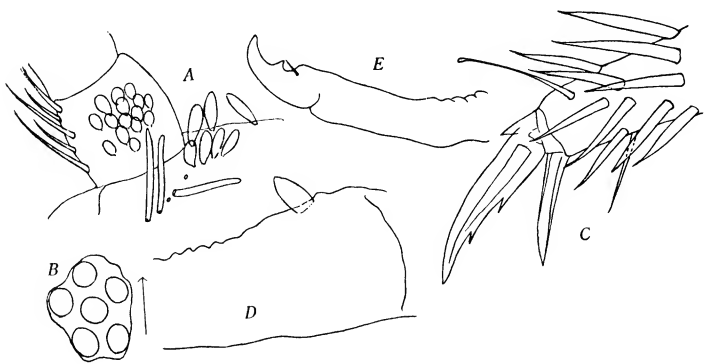


Fig. 12 *Acrocyrtus solomonensis* sp. n.

A : Antennal basis and some modified scales of the frontal region B : Ocelli C : Hind claw  
D : Dental lobe E : Mucro

Unguis slender, with a paired basal and one distal inner tooth. Dorsal tooth basally situated. Unguiculus is pointed apically, without tooth and not truncate. Furca with man:d as 1:1. Manubrium is terminally with 3+3 ventral setae. Scales around them are 10 in number and in a circular area. Laterally, there exists a row of some 7-8 pairs of larger setae minutely ciliated. Such setae are, however, not observed upon dentes. Proximal dorsal appendix of dentes is conically pointed and rather long. Distal smooth part of dentes about 3 times the length of mucro, which is bidentate with an apical tooth conspicuously larger than the anteapical. Basal spine present. From the body segment, no scales are observed. Setae sensuales are not with accessory setae or scales. All of them must have been fallen off. Lateral to 2+2 s. s. of abd. III, 3+3 sockets of setae are to be seen. But their meaning is unknown for the moment. Trochanteral organ and ventral tube is not observed by the defect of preparation.

From *Acrocyrthus heterolepis* YOSII, to which the form is strongly allied, it may be divided easily by long apical tooth of mucro. *A. solomonensis* sp. n. coincides fairly well with the description of *Lepidocyrtus parvidentatus* SCHÄFFER 1898 from New Britain in morphological details. Frontal scales, dental appendix etc were naturally not observed at that time, but the mesonotum is strongly protruded in the cited species, while it is not so in *A. solomonensis* sp. n.

### 16 *Discocyrtus dahliei* (SCHÄFFER) (Fig. 13)

*Lepidocyrtus dahliei*: SCHÄFFER 1898

3 examples from Rabaul, New Britain, 1. IX. 1958, T. TOKIOKA leg.

1 example from Koghi, New Caledonia, 12. X. 1958, Y. SHIBATA leg.

1 example Honiala, Guadalcanar Solomon Islands, 20. IX. 1958, T. TOKIOKA leg.

Body length 1.8 mm. Ground colour brownish white. Antennae bluish red on distal segments, distal end of which is especially deeply pigmented. A black spot between antennae is present. Coxae are, in contrast to SCHÄFFER's description, not at all or slightly pigmented. Ant:head as 15:9. Antennal segments are 25:45:55:60. Ant. I and II are dorsally without setae and covered with scales. Ant. IV is not annulated. Head setose on frontal margin. Eyes 8+8, in usual arrangement. Mesonotum is considerably protruded over the head. Th. II:III as 25:10. Abd. III:IV as 2:9. Coxal setae as 7, 4/7, 14, i.e. the middle coxae are very few in longitudinal setae. All legs are not scaled except for femur of hind legs. Unguis with one inner basal and one smaller inner distal tooth. A paired dorso-lateral teeth are also present. Unguiculus is, as was stated by SCHÄFFER, truncate on fore and mid legs, while it is almost lanceolate on hind legs. Tenent hair is feeble and subequal to unguis in length. Trochanteral organ is composed of numerous spiny setae densely situated in a quadrangular area. Ventral tube not scaled. Setae are not especially differentiated.



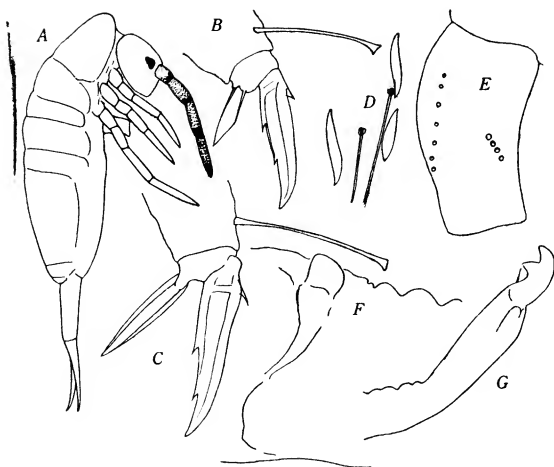


Fig. 13 *Discocyrtus dahlui* (SCHÄFFER)

A: Habitus B: Fore claw C: Hind claw  
D: Accessory scales of s. s.  
E: Setal arrangement of middle coxa  
F: Lobus dentalis G: Mucro

Furca with man:nd as 1. 0. Manu-  
brium is dorsally setose and vent-  
rally scaled. No modified setae are  
present. Distal ventral setae are  
3+3, one outer pair is larger than  
others. Some 13 + 13 scales are  
present in a rounded group near by.  
Dental lobe with prominent round-  
ed dorsal appendix. Distal smooth  
portion is about 2 times the length  
of the mucro, which is equally  
bidentate and with a basal spine.  
No dental setae are modified. Body  
scales are rounded, rather hyaline  
and relatively small in size. Setae  
sensuales with lanceolate accessory  
scales.

Morphologically, our examples coincide fairly well with SCHÄFFER's description in the form of unguiculus, although, somewhat different with respect to colouration and ratio of antennal segments. Dental appendix is naturally not mentioned by SCHÄFFER.

Two examples of New Caledonia has the lateral margin of th. II, III. narrowly banded and coxae flecked with bluish pigments.

Distributed in New Britain and in New Caledonia.

# 17 *Discocyrtus cinctus* (SCHÄFFER) (Fig. 14)

*Lepidocyrtus cinctus*: SCHÄFFER 1898, BÖRNER 1913

2 examples from Gizo Island, Solomon Islands, 18. IX. 1958, T. TOKIOKA leg.

1 example from Rabaul, New Britain, 9. IX. 1958, T. TOKIOKA leg.

Body length 1.5 mm. Ground colour brownish white in alcohol. Antennae bluish gray, each segments are distally darker. A median frontal patch is present. Th. II-abd. I laterally with dark shadow. Abd. III is strongly pigmented laterally and the patch extends often either dorsally until to the median dorsum or anteriorly until to the hind margin of abd.II. Posterior corner of abd. IV is also patched. Ant.:head as 2:3. Antennal segment as 3:6:7:10. Ant. I is dorsally not haired and probably scaled. Eyes 8+8, with two posterior eyes much smaller than others. Frontal setae not modified. Mesothorax somewhat protruded over the head. Th. II:III as 2:1. Abd. III:IV as 1:4. Coxal setae few in number, being 5, 6/6, 8. Trochanteral organ

is composed of ca. 15 spiny setae in L-shaped arrangement. Unguis normal for the group. Unguiculus is distinctly truncate in all legs. Two marginal ribs are, as stated by SCHÄFFER 1898, distinctly divergent apically. No scales are upon legs. Ventral tube without any special structures. Furca with man.: d as 1.0. Manubrium is dorsally with many feeble setae. Ventrally, it is scaled and the terminal setae are 2+2 in number. Lateral setae are not modified. Dentes with dental lobe dorsally provided with rounded appendix. Dental setae not modified. Distal smooth part about 2.2 times as long as the mucro, which is equally bidentate. Its basal spine is accompanied by a small another seta. Body scales hyaline and rounded in shape. S. s. are not conspicuous. Accessory scales on abd. III are hyaline and lanciform.

The species is the near relative of *D. suborientalis* (DENIS). But, beside the colouration of the body, both species may be divided by the shape of unguiculus of hind legs and by trochanteral organ. The species is already reported from New Britain and Java.

### 18 *Discocyrtus suborientalis* (DENIS)

*Lepidocyrtus suborientalis*: DENIS 1948, YOSHI 1959

1 example from Rabaul, New Britain, 1. IX. 1958, T. TOKIOKA leg.

1 example from Bouin, Bougainville, Solomon Islands, 16. IX. 1958, T. TOKIOKA leg.

Compared to the examples from Singapore, the terminal ventral setae of manubrium is 2+2 in Melanesian forms, while they are 3+3 in Malayan ones. But as I have examined only one example—in another specimen, these setae were fallen off—the matter is not decidedly to be determined. If they are conspecific, the species is distributed in Vietnam, Malay and in Solomones.

### 19 *Lepidocyrtus medius*

SCHÄFFER

SCHÄFFER 1898, YOSHI 1959

3 examples from Gizo Island, Solomon Islands, 18. IX. 1858, T. TOKIOKA leg.

These examples coincide fairly well with those from Singapore in all features I have examined. No dorsal appendix is present upon lobus dentalis, thus dividing the form from *Discocyrtus suborientalis* (DENIS). It is not sure, whether

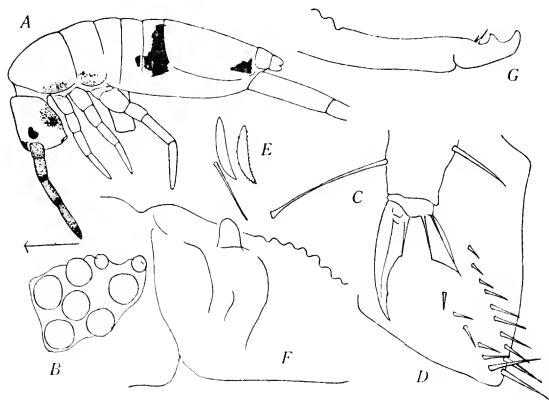


Fig. 14 *Discocyrtus cinctus* (SCHÄFFER)

A: Habitus B: Eye field C: Hind claw

D: Trochanteral organ E: Accessory scales of s. s.

F: Lobus dentalis G: Mucro

SCHÄFFER's *medius* is *Lepidocyrtus* or *Discocyrtus*. But as there has been found present examples from Melanesian area, I place provisionally his *medius* in *Lepidocyrtus*.

## 20 *Lepidocyrtus* sp.

4 examples from Rabaul, New Britain, 9. IX. 1958, T. TOKIOKA leg.

All of them are apparently in younger stages. Length 1.0 mm. Antennae blue. Laterally, th. II-abd. I are diffusely pigmented. Unguiculus acute. Dental lobe without appendix. Terminal ventral setae of manubrium 1+1 (?).

## 21 *Allsocopus tetracantha* BORNER

BÖRNER 1906, YOSII 1959

32 examples from Rabaul, New Britain, 1. IX 1958 T. TOKIOKA leg.

They are conspecific with the Malayan examples in all respects.

Distribution: Malay, Java and New Britain.

## 22 *Paronella bougainvilleae* sp. n. (Fig. 15)

1 example from Bouin, Bougainville Island, 16. IX 1958 T. TOKIOKA leg.

1 example from Gizo Island, Solomon Islands, 18. IX. 1958, T. TOKIOKA leg.

Body length 2.3 mm. Ground colour yellowish white in alcoholic specimens. Slightly pigmented patches are present along the lateral part of the body from th. II to abd. IV discontinuously. Each patched area is, in strong magnification, formed by the reticular network of pigments. Ant. I basally dark. Tibiotarsus of each legs, also slightly dark. Ant. I as long as the head, densely setose with short, fine setae and not scaled—if not fallen off. Other antennal segments are mutilated. Along the fore margin of the head, a row of some 8+8 long setae are present together with other setae of the head. No special spines as in *Salina* or in *Callyntrura* are present. Eyes 8+8, arranged in two longitudinal rows. Th. II is not protruded. Abd. III/IV as 3:13. Legs long, not scaled. Tibiotarsus bears medially a sign of articulation, where it is depicted. Hind tibiotarsus bears, directly before the articulation, one prominent seta on its posterior margin. Trochanteral organ not specialised, being composed of some 45 strongly spinous setae. Unguis with a pair of dorso-lateral teeth well developed to form a pseudonychia. Inner margin is bidentate. The basal one is in one pair, and is located near to the base upon fore and mid legs, while it is at about the middle on hind legs. Distal tooth is always present. Unguiculus is lanceolate, acutely pointed and not toothed. Tenent hair is slender, as long as the unguis and broad distally. Ventral tube has anteriorly 5+5 strong distal setae and many small proximal setae. Posteriorly, there are also some strong and weak setae not in a fixed arrangement. No scales are to be seen. Furcula with man.:d. as 2:3.

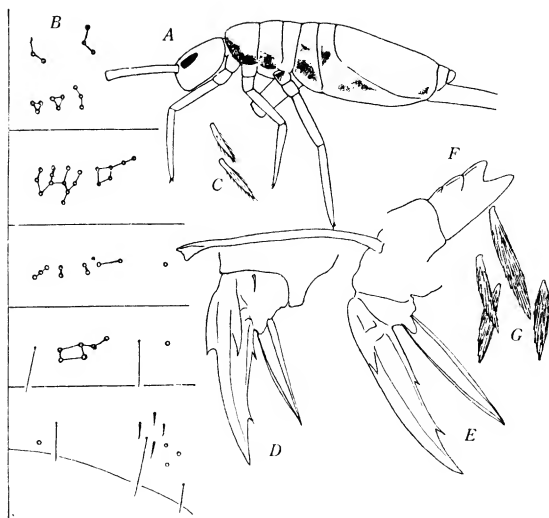


Fig. 15 *Paronella bougainvilleae* sp. n.

A: Habitus B: Chaetal arrangement (diagrammatic)

C: Accessory setae of s. s. D: Middle claw

F: Mucro G: Body scales

not observed. Integument smooth. Some body scales, which are retained, are elongate, spindle shaped and roughly sculptured. Accessory setae of s. s. is incompletely observed upon abd. III, where there were short feathered setae. Chaetotaxy of the body is typically oligochaetotic and, therefore, decidedly useful for the specific identification. Their location on each tergite is, as is indicated in fig. B, slightly different on either sides, the left side having one or two setae more than on the right side. But in principle, they do not differ at all. From th. II post. until to abd. II, each tergites has its peculiar mode of chaetotaxy. Abd. IV has remarkably no proximal transverse row of setae of *Salina* and *Callyntrura*.

From other species of the genus, *P. bougainvilleae* sp. n. is different by the relatively pale colouration of the body.

### 23 *Pseudoparonella queenslandica* (SCHÖTT) (Fig. 16, A-G)

*Paronella queenslandica*: SCHÖTT 1917

*Pseudoparonella queenslandica*: WOMERSLEY 1937

10 examples from Koghi, New Caledonia 12. X 1958, Y. SHIBATA leg.

1 example from Koghi, New Caledonia, 9. X 1958, Y. SHIBATA leg.

Body length 2.3 mm. Antennal length 3.5 mm. Ground colour stramineous yellow. Antennae darkly pigmented all through the length, leaving distal end of each segments unpigmented. Head reddish blue near to the mouth. Legs are also darkly pigmented especially on each tibiotarsus. Trunk with pigmented lateral stripe from

Manubrium is dorsally with many feeble setae and ventrally nude. No scales are to be observed. Dentes not tapering and without dorsal crenulation. Dorsally, it is richly beset with many short, spinous and normal setae not in a fixed arrangement. Ventrally, it is denuded of any setae or scales. Mucro, which is attached only to one side of the specimen, has distally two prominent teeth typical for the genus. On the dorsal margin of the mucro, however, one small third tooth and basally, a vestigially minute fourth tooth are to be observed. Male genital area

th. II until to abd. V, including coxal part of each legs. More intensely and blackish pigmented are median dorsum of abd. III and a small median area upon abd. IV and V. Ventral tube with lateral stripe. Furca pale. Antennae very long. Ant. I: head as 4:3. Ant. segm. as 7:10:7:18. Ant. III is, therefore, shorter than ant. II. All segments are hirsute and some setae on proximal two segments are very long. Ant. IV is annulated on its distal half. Narrow scales are scattered dorsally upon ant. I and II. Head with 8+8 eyes in two transverse rows. Frontal margin setaceous. Hind margin of head capsule with a row of simple spiny setae. Th. II not protruded. Abd. III:IV nearly as 4.5. Legs scaled upon femur of middle and hind legs, but not upon other parts. Trochanteral organ composed of about 50 spiny setae in quadrangular arrangement. Unguis dorsally carinate and with paired lateral teeth at about  $2/5$  of the length. Inner margin has a paired basal and one distal tooth as usual. Unguiculus is lanceolate and often with an outer tooth near the basis. Tenent hair much longer than the unguis, robust and with dilatated apex. Ventral tube is not scaled. Anterior face has a row of some 5+5 strong terminal setae. Furca with man.:d as 8:11. Manubrium is dorso-laterally hirsute, with a pair of lateral row—not marginal—of larger setae. Ventrally, it is densely beset with smaller scales. Terminal setae

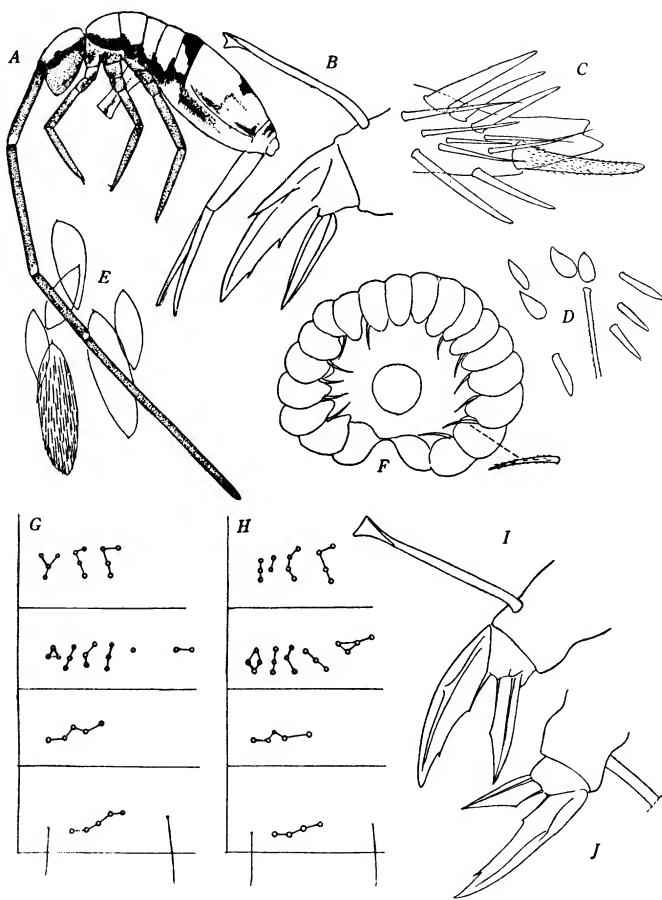


Fig. 16 *Pseudoparonella queenslandica* (SCHÖTT)

- A: Habitus B: Fore claw C: Mucro  
D: Accessory setae of s. s. E: Body claw  
F: Male genital opening  
G: Setal arrangement (diagrammatic)  
*Pseudoparonella queenslandica flavotruncata* ssp. n.  
H: Setal arrangement (diagrammatic) I: Middle claw  
J: Hind claw

2+2 and the scales around them are much larger and greatly elongated. The same type of scales cover the ventral side of dentes. Outer lateral side of dentes are with many short ciliated setae. Dorsally, setae are elongated and, on inner side of it, there are some spinous setae almost not ciliated. But their arrangement is quite irregular. No dorsal crenulation of dentes. Near the mucronal end, these setae are short, but thicker and one basal seta is extremely large, surpassing the mucro and ciliated. Mucro is not distinctly divided from dentes, elongate and equally bidentate. Genital opening of male is surrounded by a ring of 20 well defined, rounded tubercles, to the inner side of which 6+6 feeble setae are attached. All these setae are minutely ciliated. Body surface is densely covered with brownish scales, which are roughly striated and pointed on both sides. Body setae are of usual brushed type. Only those on abd. IV are not brushy but bluntly ending. Setal arrangement is oligochaetotic and the distribution of larger setae are as in fig. G. s. s. as 2, 3, 2 upon abd. II-IV. Accessory scales are foliaceous and rounded upon abd. II, and III. On abd. IV, 2+2 s. s. are located near the posterior end of the segment and accessory scales are mingled with some broad short setae.

The material coincides well with Australian representatives described from Queensland.

**24 *Pseudoparonella queenslandica flavotruncata* ssp. n.** (Fig. 16, H-J)

2 examples from Koghi, New Caledonia 9. X 1958, Y. SHIBATA leg.

6 examples from Koghi, New Caledonia 12. X 1958, Y. SHIBATA leg.

The new subspecies is near to the principal form in many respects. But all unguiculus are distally truncate in shape. The body pattern is, when present, very poorly developed, faint or quite disappears. Chaetotaxically, it is different with respects to th. III and abd. II, as reproduced in fig. H. This difference is characteristic and constant in all examples I have examined.

**25 *Pseudoparonella novae-caledoniae* sp. n.** (Fig. 17)

1 expl. (female) from Koghi, New Caledonia, 9. X 1958, Y. SHIBATA leg.

Body length 2.8 mm. Ground colour brownish. Antennae bluish pigmented. Ant. II, III darker proximally. Body pattern intensely blue. Head with lateral stripes including antennal base and eyes. Th. II with pigmented margin. Dorsally, a median stripe exists from th. III until to abd. III, extending laterally upon abd. II and III. Median part of abd. III are pale. Abd. IV has lateral marginal stripe on posterior half and a median patch at about the middle of the segment. Abd. V is laterally pigmented. Abd. VI pale. Legs with two conspicuous markings upon each femur

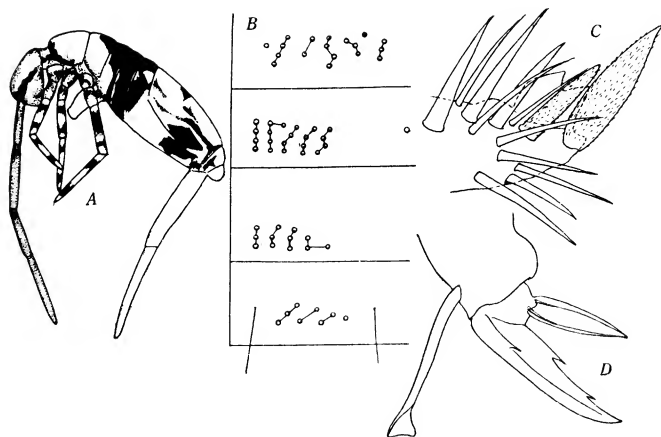


Fig. 17 *Pseudoparonella novae-caledoniae* sp. n.

A: Habitus B: Chaetal arrangement (diagrammatic)  
C: Mucro D: Hind claw

and tibiotarsus. Ventral tube and furca pale. Antennae a little shorter than the body. Ant: head as 4.0. Ant. segm. as 4:5:4:6. Fore margin of the head without spines. Eyes 8+8, in two rows. Mesothorax not extended. Abd. III:IV as 1:4.5. Antennae densely scaled dorsally until to the proximal part of ant. III. The last antennal segment with slight annulation. All legs are

scaled upon each femur and tibiotarsus. Unguis robust, a paired basal and one distal tooth on its inner side. Lateral teeth are conspicuous. Unguiculus lanceolate and apically pointed. Tenent hair well developed, thick and apically dilated. Opposite spine of hind legs conspicuous. Femoral organ absent (cf. *Handschinella* Yosii 1959). Trochanteral organ composed of about 40 spiny setae. Ventral tube not scaled. Anteriorly with a row of 8+8 larger terminal setae and with some slender proximal setae. Posteriorly, it is extremely hirsute with feathered setae. Furca with man.=d. Manubrium is dorsally with many slender setae. Ventrally, it is covered with many small scales which are elongated upon distal part of the ventral side. Dentes with many feathered setae dorsally and laterlly. Those of distal parts are spiny without forming rows. The most distal one or two of them are extremely enlarged and robust, surpassing the equally bidentate mucro, whose incertion to dentes is not clearly defined. Ventral side of dentes is evenly scaled. Chaetotaxy oligochaetotic, almost symmetrical. Those on abd. I and II are seemingly very peculiar. Body scales are brownish, ovate, but pointed on both sides. They are roughly sculptured. In contrast to *Pseudoparonella queenslandica* all larger setae of body are not brushed type but merely lanciform distally. S. s. not large. Accessory scales of them are alike to usual body scales, but smaller and rounded on apex. The species is near to *Pseudoparonella appendiculata* (SCHÖTT) 1917 from Australia, but different in banded legs. Morphologically, they are different in the form of tenent hair and unguiculus. Mucronal end of dentes are also different.

## 26 *Pseudoparonella shibatai* sp. n. (Fig. 18)

1 expl. from Koghi, New Caledonia 9. X 1958 Y. SHIBATA leg.

Body length 2.2 mm. Colouration whitish. Antennae pigmented blue distally upon ant. I, II and proximally upon ant. III, IV. Interocular patch black. Other parts of the body pale. Ant./head as 3, 0. Ant. segm. as 4:5:5:8. Proximal two segments are scaled on dorsal side, while distal two segments are only hirsute. Ant. IV is slightly annulated. Frontal margin of head capsule with some long setae. Eyes 8+8, distal two are larger than others. Legs scaled until to tiobiotarsus in all legs. Unguis normal, a pair of inner proximal teeth are located near to the basis especially on fore legs. Unguiculus are distinctly truncate distally. Tenent hair robust, as long as the unguis and distally dilated. Trochanteral organ not special. Ventral tube proximally with a row of some 8+8 larger setae. Furca with man:d as 5:4. Manubrium is dorsally hirsute, with many short and long feathered setae. Along the dental end of the segment, there are 3+3 larger, thicker and ciliated setae much modified than usual ones. Ventrally, the segment is only scaled and those scales on dental margin are more elongated. Dentes, which is not crenulated and slightly tapering distally, is beset ventrally with many slender scales. Dorsally and laterally, there are many ciliated and feathered setae. Some of them are very long and others are thick and more conspicuously feathered. The latter are arranged dorsally in some longitudinal rows. Near the mucronal end setae are more robust and two setae nearest to it are inflated, large and spindle shaped. The last one is more conspicuous than in any other known forms of the genus. These two setae are origi-

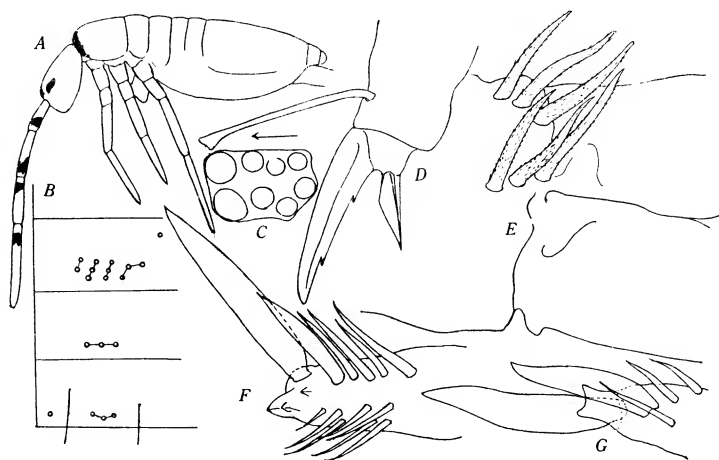


Fig. 18 *Pseudoparonella shibatai* sp. n.

A: Habitus B: Chaetal arrangement (diagrammatic)  
C: Eye field D: Middle claw E: Dental end of  
manubrium (dorsal view) F, G: Mucro

nally belonging to the inner dorsal row of dental setae. Mucro is bidentate equally and not well divided from dental segments. An additional basal tooth is visible in dorsal view. Many brownish coloured larger setae are arranged as in fig. B upon each tergites. Those of th. II were not observed. Scales of body are brown,



spindle-shaped and pointed. S. s. and its accessories are not observed.

The species is dedicated to my colleague Mr. YASUHIKO SHIBATA of the OSAKA MUSEUM, who has collected the present form. It is conspicuous in having well modified dental setae, mucro appending setae and uncoloured body. Body colour is near to *P. halophila* WOMERSLEY 1937 from West Australia, but it has lanceolate unguiculus. The genus *Paronana* WOMERSLEY 1937, which is established by having two distal scale-like lobes near the mucro, is, in all other respects, akin to *Pseudoparonella*. To judge from the figure given by the author, these lobes might be the sockets of two blunt setae of *Pseudoparonella*. The problem must be further investigated. The species is also near to *Chaetoceras sarasini* HANDSCHIN 1926 from New Caledonia but different by the absence of long antennal setae.

### ***Lepidonella* g. n.**

Body form more entomobryid than paronellid in appearance, all extremities being not extremely long. Eyes 8+8, in entomobryid arrangement. Dentes tapering distally, but not annulated dorsally. Mucro paronellid in principle. Chaetotaxy achaetotic as in *Lepidocyrtus*.

From *Paronella* SCHÖTT, the genus is to be divided by the achaetosis of the body. Scales are not observed but probably hyaline. Paronellid genus with achaetotic body setae is hitherto known only in *Handschinella* YOSII, which has queer femoral organ on hind legs.

Genotypus: *Lepidonella tokiokai* sp. n.

### **27 *Lepidonella tokiokai* sp. n. (Fig. 19)**

1 example from Bouin, Bougainville, Solomon Islands 16. IX 1958 T. TOKIOKA leg.

Body length 1.8 mm. Ground colour whitish. Deep purplish pigments form a large longitudinal patch laterally from th. II to abd. III. A pair of separate stripes are also present at about the middle of abd. IV. Abd. V is laterally patched. Antennae mutilated but probably not very long. Ant. I is ventrally setose and dorsally scaled to judge from sockets. Head with some feathered setae on the fore margin and a row of spiny setae along the hind margin of the head capsule. Eyes 8+8, not in two rows, but in an arrangement alike to *Entomobrya*. Th. II not protruded, but about 3 times the length of th. III. Abd. III:IV as 1:5. Legs not elongate, not scaled and without femoral organ. Unguis with a pair of small dorso-lateral teeth. Inner margin of the unguis is tridentate in fore and mid legs, with a paired basal teeth near to the basis and two distal teeth, while it is bidentate and with a paired basal teeth about the middle of its length upon hind legs. Unguiculus is, in all legs,

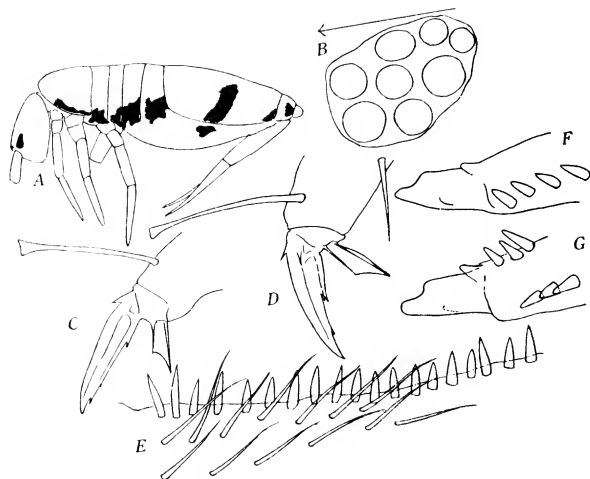


Fig. 19 *Lepidonella tokiokai* g. & sp. n.

A: Habitus B: Eye field C: Fore claw  
D: Hind claw E: Dental spines F, G: Mucro

and ventral side is scaled to judge from sockets. Two rows of very conspicuous conical spines of small size are running along the inner and outer ventro-lateral border of these two areas, beginning just from the proximal manubrial end until to the mucronal extremity, without varying their size and form. Each row comprises from about 60 short, conical spines not at all ciliated. Mucro is plump. Apical and anteapical tooth rounded. An inner lateral tooth is also rounded in appearance and smaller than other two. A fourth tooth is vestigially located inner-ventrally as a slight elevated ridge of the chitinous integument. Body densely covered with scales to judge from the sockets, although not a single scale is retained in the example. Chaetotaxy is typically achaetotic and no large body setae are to be seen except along the fore margin of th. II. Setae sensuales are feeble, rather short. Accessory setae of them are not observed.

The species is dedicated to Dr. TAKASHI TOKIOKA of the KYOTO UNIVERSITY, to whom I owe the present collection. Two species of *Paronella* described by SCHÄFFER 1898: *P. dahlii* and *P. picta*, both from the Bismarck Archipelago are near to the present form to some extent. Both of them have truncate type of unguiculus in common with the present form. But *P. dahlii* has elongated antennae and *P. picta* has dentes not tapering distally. Both of them have no distinct row of spines of dentes. The body pattern is also quite different.

strongly truncate distally. Tenent hair slender, longer than the unguis and distally flattened. Trochanteral organ composed of many feebly developed outstanding setae. Ventral tube not specialised. Furca with man: d as 1.0. Manubrium is dorsally setose and ventrally scaled to judge from the socket. Terminally, near the dental end, an assembly of larger scale-sockets are ventrally observed. Dentes are tapering distally, but not annulated dorsally. Dorsal side is setose with feeble setae

## 28 *Rastriopes* (*Prorastriopes*) *fuscus* sp. n. (Fig. 20)

2 females from Rivière Bleue, Plaine des Lacs, New Caledonia, 3. X 1958, Y. SHIBATA leg.

Body length 2.3 mm. Ground colour is dark brown, but the trunk is completely blue black, excepting the ventral half of anal segment. Antennae and distal half of legs are also brown. Head capsule brown, but darker near the mouth. Ant.: head as 1:1. Ant. segm. as 5:9:12:23. Ant. IV is subsegmented. Intermittent segments ca 7, the annulation being incomplete distally. Apical end with some smaller setae. Ant. III-organ is a paired sensory rods accompanied by one small seta. Eyes 8+8. Setae upon vertex are not specialised. On each side of the vertex, there exist a pair of rounded tubercles. They are not much differentiated, but may be discriminated by the smooth surface of the integument and by two feeble setae upon them. Legs are rather short. Each tibiotarsus are densely beset with many spinous setae along the posterior margin representing the so called "rastral organ". But they are not serrated nor truncate in appearance. In the last spinous seta of hind legs, there has been found a small plicated ramus on one side. But it is certainly an abnormal case. Tenent hair spiny and one to each, but there are 3, 3, 3 prominent setae on the in-



Fig. 20 *Rastrioptes fuscus* sp. n.

- A: Habitus in outline
- B: Antennae
- C: Ant. III-organ
- D: Frontal view of head
- E: Hind claw (inner view)
- F: Hind claw (outer view)
- G: Tenaculum
- H: Appendix analis
- I: Dentes (dorsal view)
- J: Dentes (ventral view)
- K: Mucro (inner view)
- L: Mucro (dorsal view)

ternal face, distally swollen and dilated, which are hitherto enumerated to tenent hairs. On both sides of tibiotarsus, a longitudinal row of short setae. Unguis triangular in shape and not dentated. Unguiculus is slender, tapering distally and surpasses the unguis. Ventral tube with distal part warty on one side. Tenaculum with tridentate rami and the corpus is elongated, having  $2 + 2$  small distal setae. Furca with  $d : mu$  as  $11 : 5$ . All dental setae are simple and arranged in a manner as :

	inner	7
Dorsal	dorsal	7
	outer	6
ventral	3, 2, 1 .....1	(small)

Mucro is apically upturned. Its inner margin is entire and with extremely broad lamella. Outer margin is narrow and with one small notch at about the middle. The larger abdominal segment is beset with many simple setae not at all modified. S. s. are not calculated. Appendix analis is a curving, horn-like seta with a row of very minute denticulation on one side. Integument is minutely reticulated upon head and trunk. Body setae are brownish, smooth and pointed. The largest of them is the length of mucro.

The species is to be included in the *Prorastriopes* D.D. 1947 by the simple rastral setae of legs. The nearest ally is *Sminthurus aculeatus* SCHÖTT 1901, the genotypical species of *Rastriopes* from New Guinea, from which the species is different in body pattern and by dorsal setae, which is spiny in the cited species.

## 29 *Dicyrptomina bougainvilleae* sp. n. (Fig. 21)

1 female from Bouin, Bougainville, Solomon Islands, 16. IX 1958, T. TOKIOKA leg.

Body length 1.3 mm. Upon the brownish yellow ground colour, blue black patches are distributed as in fig. A. Antennae intensely dark. Legs are mottled until to the femur. Tibiotarsus uniformly coloured. Ant. : head as  $2 : 1$ . Ant. ratio as  $4 : 25 : 33 : 6$ . Ant. II and III each with one false subsegment. Ant. III strongly irregular in outline. Ant. IV not annulated. Head with  $8 + 8$  eyes. Vertex without any spines. The great abdominal part proximally with distinct segmental structure, impliciting the thoracal segments. Posterior part is dorsally globose, with considerable swelling, but without any verrucosity. Anterior half of the trunk is without any setae. Posterior half dorsally with many modified blunt short setae and usual simple ones. Hind tibiotarsus with 2 special setae not plumose but simple. Unguis with complicated pseudonychia and 1-2 inner teeth. Tunica is present distally. Unguiculus is broadly lamellose upon hind legs and more narrowly built upon others. An inner tooth is present. A filiform seta is much longer than unguiculus upon fore and mid legs, while it is slightly longer than that upon hind legs. Furca with  $den : mu$  as  $38 : 10$ .

Manubrium is dorsally with some simple setae. Dentes dorsally with some simple and other slightly serrulated setae. Their arrangement is as:

Dorsal:

outer I, 1, VI; = VII+1  
dorsal I-I, I = III  
inner 1, III, 2, 2=III+5

Ventral: 2, 2, 1, 1, 1

.....1 (vestigial)

All ventral setae are simple. Mucro has two dorsal margins dentated in different manner. Outer margin is very minutely serrated, while the inner margin is more coarsely dentated with smaller and larger rounded teeth, which are located alternatively as in fig. H. Mucronal tunica present. Anogenital segment has *appendix analis* almost setaceous and not much longer than the adjacent seta. From many setae surrounding the anus, some of them (two of lateral flaps and some of the dorsal flap in fig. I) are minutely ciliated and with a slight lamella on one side. Dorsal setae of the genital segment are strong, blunt and ciliated.

The species is nearly related to *D'na verrucosa* HANDSCHIN 1930 of Philippine with its special dentation of mucro and constriction on thoracal parts. But there is no verrucous structure of the abdominal integument in the present species. The body pattern is also different. Taxonomic meaning of the thoracal structure of these species must be further investigated.

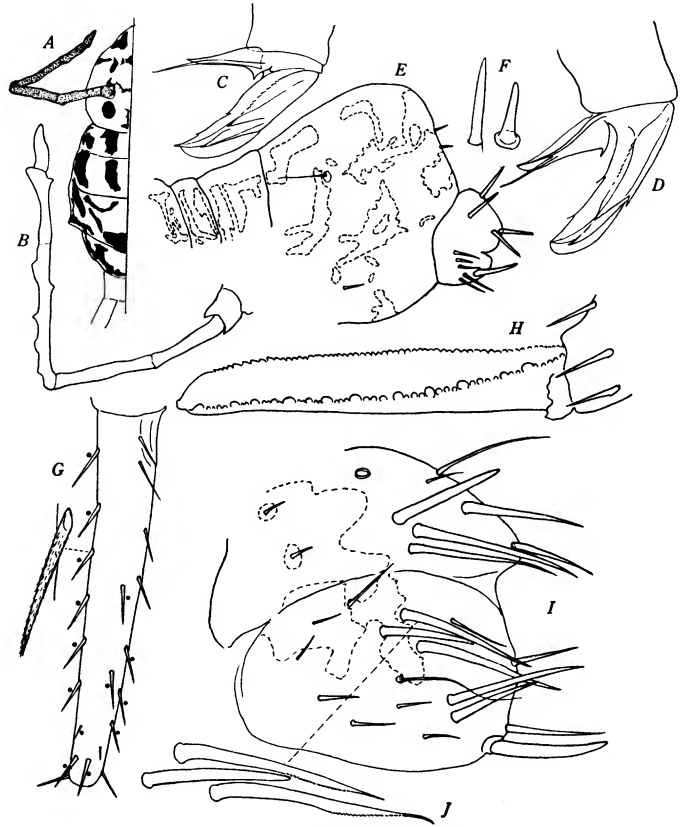


Fig. 21 *Dicyrtomina bougainvilleae* sp. n.

A: Body pattern B: Antenna C: Fore claw  
D: Hind claw E: Side view of abdomen

F: Special setae from the posterior part of abdomen

G: Dentes (dorsal view) H: Mucro I: Anogenital

segment (lateral view) J: Three setae from the lateral flap of anal segment

(Black spot of Fig. G indicates the serrated dental seta)

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